

**UNIVERSITI TEKNOLOGI MARA**

**THE EFFECTIVENESS OF COACH'S  
EYE MOVEMENT ANALYSIS ON  
LEARNING SPORTS SKILLS IN  
PHYSICAL EDUCATION**

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## ABSTRACT

This study is designed to determine the effectiveness of the Coach's Eye movement analysis application with the conjunction of smart devices integrated into learning sports skills. Specifically, this study is focusing on the perceptions among participants towards the Coach's Eye movement analysis application [TechSmith Corp.] and its potential effects on learning sports skills. Additionally, this study also explored the potential of a modified integrated model of qualitative movement diagnosis (QMD) to support best teaching practices. Besides that, this study also attempted to determine the size of devices' effects on participants' experience in learning sports skills. The Unified Theory of Acceptance and Use of Technology (UTAUT) and the Contingency-developed Task models are used as the theoretical frameworks while the modified QMD is adopted as the conceptual framework of this study. Next, randomized control trials (RCTs) adopted by this study involve both experimental and control groups (i.e., 25 participants for each group; mix-genders with an age range between 19-25 years old) comprise of undergraduate level physical and health education students at a local university in central of peninsular Malaysia. The researcher has used three different sizes of smart devices (i.e., 5, 7, and 10 inches) as the tools to implement study interventions. Meanwhile, the Coach's Eye application was used along with the devices to implement the intervention in tennis and badminton sessions throughout the semester (8 weeks). Both sports were chosen due to the high technicalities involved in learning skills and gameplay as well as part of the participants' course syllabus. The instruments used in this study include (1) the modified Traits Sport-confidence Inventory (TSCI), (2) an entry-exit survey, (3) kinesthetics feedback, and (4) focus group discussion. This study found that participants improve their self-efficacy in learning tennis and badminton from ( $M=6.04$ ,  $SD=0.94$ ) to ( $M=7.54$ ,  $SD=0.57$ ) respectively. Although both the control and experimental groups does improve at the end of each sport, the experimental groups recorded a higher improvement in learning sports skills due to the additional feedback. Qualitative data reveals that many of the participants suggested the intervention was useful especially in the identification of techniques, reviewing gameplay, and doing immediate corrective actions during the learning sessions. They also associated the intervention with increase motivation and curiosity while having no problems learning sports skills with technology as they were familiar with the smart devices. The majority of the participants preferred the 10 inches computer tablet due to its practicality and higher productivity while the 5 inches smartphone was associated with convenience and higher accessibility to learning content with technology. The results from this study will increase meaningful learning among students, promoting higher engagement and learning ownership of the contents. Educators can better understand the needs of their students, thus, informing their future teaching practices. Ultimately, policymakers should consider this study's results in developing a personalised, student-centred approach, technologically driven policy, curriculum, and co-curriculum in Malaysian learning institutions.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Research Background

Education in the 21<sup>st</sup> century is becoming more dynamic and challenging as children are nurtured and more exposed to various technologies (e.g., smartphones, tablets, voice recognition devices). Thus, millennials are more willing to learn new content using innovative methods compared to the earlier generations. The mass production of smart devices resulted in cheap, highly accessible, and almost if not already becoming a necessity for the millennials to own a smart device.

Unfortunately, since the booming of these smart devices, many authors noticed a downward trend of children involved in healthy lifestyles (i.e., low levels of physical activity (PA), not hanging out with friends, and sleep deprivation) (Twenge, Martin, & Campbell, 2017; Huang, 2017). Similarly, a dose-response relationship occurs when more time spent on smart devices will also increase in sedentary lifestyle (e.g., watching TV, playing digital games, and browsing the Internet (Iannotti et al., 2009). To make matter worse, Malaysia is currently ranked 1<sup>st</sup> in Asia for obesity and Malaysian spend an average of nine hours daily using their smart devices for various purposes (e.g., playing games, productivity, networking) (National Health and Morbidity Survey (NHMS), 2019).

The combined factors of uncontrollable hand-held technology, curriculum, and teaching styles have contributed to students' disengagement from learning physical education. Previous authors have found that only 27% of girls and 43% of boys were capable to achieve the minimum recommended of 60 minutes of physical activity throughout the day once they started secondary school (Wilkinson & Bretzing, 2011). As needs, demands, and interests are changing with time, continuing with the conventional teaching styles will eventually shun the young generation from learning and accentuate the number of the individual having non-communicable diseases (NCDs) (e.g., obesity,